

SAVE THE DATES:

• AT Educational In-Services at McGuire

- Sept. 16—Cognitive APPS
- Oct. 21—ECUs
- Nov. 18—iCloud
- Dec. 16—Google Drive

Location: OT Main Clinic

Contact Melissa Oliver x2134 for questions

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Richmond AT Program Hosted VA Innovation Creation Series Make-A-Thon

On July 28-29, 2015, the McGuire VAMC's hosted the 1st VA Innovation Creation Series Make-A-Thon. The McGuire AT Program collaborated with the VA Center for Innovation to develop an environment where Veterans and providers could share their challenges with innovative individuals in hopes that a possible solution could be developed.

The event kicked off by Andrea Ippolito, VA Center for Innovation, sharing the vision of the Make-A-Thon as well as sharing the process of a Make-A-Thon. Melissa Oliver, OTR, AT Program Coordinator, shared the role of assistive technology at the VA and its impact on Veterans' lives. The presentations ended with Peter Liacouras, engineer at Walter Reed, discussing the use of 3D printing in different clinical applications including adaptive driving to adaptive sports to prosthetics.

A panel of Veterans and providers shared their stories about their everyday challenges due to their injury, illness or disease. Each one put forward a challenge to the audience of approximately 125. Some of the Challenges included:

- Coupler for a Prosthetic leg to make it easier to take off the prosthetic leg and not the whole socket
- Device to make it easier to put make-up for women with tremors
- Medication box/system that had more than four times a day with reminders and had the flexibility to include PRN medication
- Attachment for a Prosthetic arm to attach safely to a motorcycle.

After the challenges were presented, the participants had 30 minutes to create a team. Once the teams were formed, they spent the remainder of the day and next day interviewing Veterans and providers about the challenges to help better understand the issues, brainstorm possible solutions, design their idea and create a prototype. Stratasys and 3D Systems provided 3D Printers for the two-day events for the teams to see their designs come to life.

Throughout this whole process, mentors from Toyota, GE, 3D Systems, and clinicians

were available to assist the teams in fine tuning their solutions.

Additional highlights included, IPSOS teaming up with women and young girls who work in STEM (science technology engineering and math) to promote women in these areas. They provided opportunities for practicing their presentations of their ideas, had female panelists who discussed their

experience working in the fields of science and technology and brought innovations to the event that focused on beautifying prosthetic limbs.

As the next day came, the innovative teams were frantically completing and tweaking their prototypes in time for their judging. In addition, they were required to upload their design to NIH 3D Print Design's website as part of the judging requirements. (continued Page 5)

"For me, I don't think there is a better thank you that you could give me."
- A Veteran



FY15 ASSISTIVE TECHNOLOGY EDUCATIONAL OPPORTUNITIES through EES

Program Description:

This live – meeting program is designed for Rehabilitation Services physicians and rehabilitation clinicians to address the knowledge gap in providing assistive technology that addresses current health care requirements of Veterans with specific rehabilitative needs. This course will cross many areas of disability including, Polytrauma, Visual impairments, Physical limitations, Cognitive and communication deficits that may limit Activities of Daily Living. There are 5 Assistive Technology (AT) labs located at the Polytrauma Rehabilitation Centers; however, this training would expand that knowledge and skills of providers beyond those 5 AT centers. The training will assist in increasing Veterans' level of function, independence and safe-

ty while providing consistency and care across the VHA system.

Audience: Health care professionals including physicians, speech-language pathologists, occupational therapists and other clinical staff such as physical therapists, recreation therapists, blind rehabilitation specialists and kinesiotherapists.

Topics:

- ◆ October 2, 2015— Telehealth/ Virtual Care
- ◆ November 6, 2015 - Communication or Cognitive Aides
- ◆ December 4, 2015 Blind Rehab

Continuing Education is offered for AOTA and ASHA.

Registration is always through TMS.



Meet McGuire's AT Team ...John Moossa, OTR/L



John Moossa, MS OTR/L
Occupational Therapist
Wheeled Mobility Director

John Moossa is a graduate of Virginia Commonwealth University's Occupational Therapy Program in Richmond, Virginia where he earned a Master's Degree in Occupational Therapy. He made a mid-life career change to become an occupational therapist. He learned about the profession while his father was receiving rehab in the hospital. Prior to that, he worked as an independent painting contractor and a performing singer/songwriter. Before coming to the VA, Mr. Moossa worked as an occupational therapist mainly with the geriatric population in long term care and skilled rehab.

Here is a little more information about Mr. Moossa:

How long have you been at the VA?

I am a new arrival at the VA as of the end of July 2015. As a

student I participated in a 12 week Fieldwork II clinical in the SCI&D unit at McGuire.

What do you like about working at the VA?

It's a real honor to work with the veterans. It's also a catalyst for professional development to work with the highly skilled and experienced members of the rehab services and AT teams. The VA has access to state of the art assistive technology more so than many other providers in the private sector. This enables us to provide veterans with the seating and positioning system that suits them best.

What areas of AT are you interested in and like working with?

Seating and positioning and wheeled mobility.

Why are you passionate

about AT?

AT devices improve quality of life for all of us. Wheeled mobility devices are vital assistive technology that increase functional independence. Having access to a broad range of AT equipment allows us the chance to select the most appropriate seating system for each veteran's needs. I am eager to become a specialist in this area working with the veterans. I am also passionate about AT as a means to contribute to productive aging which is a rapidly expanding segment of our population.

Tell us about other interests outside of the VA.

Spending time with my family, hiking, flatwater kayaking, cooking, performing music with my eponymous band, walking the dogs, enjoying craft beers.

Veteran's Story...

My life overall has been a testimony of strength and overcoming many obstacles. I am a survivor of Domestic Violence that occurred while I was an active duty in the U.S. Marine Corps. When diagnosed with Traumatic Brain Injury my first thought was "will I ever be able to truly be independently successful or experience a happy life."

Being a part of the Assistive Technology Program has enabled me to see my head injury and trauma as useful stepping-stones to a new life, not a loss. Working with my speech therapist, Katina Sokol, I have felt nothing but encouragement from her introduction of learning a new way to utilize my memory device, which is a iPad and a special keyboard to help with vision. By having an AT specialist to show me the areas I struggle in that can potentially create or exasperate my symptoms, I am able to reset my new life. I have also utilized memory cards in my home and vehicles to aid me in setting a routine and a rhythm that will become familiar. I am also utilizing sleep and relaxation devices and applications that are loaded on my Assistive Technology. This is beneficial due to my headaches and sleep issues that impacted my problems because of my vision.

The Traumatic Brain Injury Center has helped me to also have my vision checked more often due to changes to my vision, and they also help to provide me with special lenses that help to decrease my daily migraines. Overall I am praised for asking for help more and learning that needing help does not make me needy. That was important to not feel like I am an inconvenience as a veteran.

My Physical therapist helps me tremendously by increasing my confidence when I make an accomplishment or progress by utilizing strategies that can help improve my balance and coordination. I am now making adjustments to things I used to do instead of limited the things I want in my life.

I am also in Tai Chi, which transformed my body, mind, and soul. Spirituality has always been a huge part of my recovery and the transformation that occurred in this program introduced me to peacefulness that I could utilize during periods of restlessness, anxiety, fatigue, and sleep disturbances. Tai Chi is a huge component of self-love, self-care, and self-compassion.

By addressing my trauma in conjunction with my TBI treatment I feel more balanced and connected, like all the pieces to the puzzle are being connected. I am supported tremendously, which creates an environment where I can thrive vice staying in a victim or survivor mode. I think that I can feel that the staff genuinely cares about my overall growth and me as a person. I no longer feel ashamed of my disabilities because I understands that I can thrive and know that I have a choice to do more than just to survive.

I started going for walks and have traveled out of state and reconnected with old friends. I am slowly having a desire to experience a new life. I feel that I have exceeded a better quality of life because



I will always have to work and cope with the residue of trauma and the effects of my head injury, but I feel that I have transformed as a result of accepting and thriving from what I experienced. I thank God and this program for helping me to see that because of my experiences that I have emerged into a stronger and better person, now I am free. The Assistive Technology Program changed and saved my life.

**"The Assistive
Technology
Program
changed and
saved my life"**



Live Changing Event impacting Veterans and the Community as a Whole ...Melissa Oliver, MS OTR/L

On July 28-29, 2015 at McGuire VA Medical Center in Richmond, Virginia, the Assistive Technology Program partnered with the VA Office of Innovation to bring together innovators... inventors...problem solvers to create solutions for challenges our Veterans face every day. I could not have imagined the lasting impact the VA Innovation Challenge Make-A-Thon would have on all of those involved.

The Make-A-Thon began with several Veterans sharing their challenges through Their story...

- Veteran Eric Young had the participants envision a road running through the mountains of Colorado and how it would feel as you drove your motorcycle down that road...then imagine not being able to do it because of the loss of your arm. Mr. Young, "I want and I will ride my motorcycle on that road through the mountains of Colorado."
- Veteran Kim Matthews spoke about how everyday things that women do to get ready in the morning are taken for granted but is a challenge for her because of her hand tremors. The tremors make it more difficult to put on make-up, fix her hair and button her blouse to the point that she does not go out as much anymore. It is isolating.

These are a just a few of the stories that were shared which touched participants so much that those that came as spectators de-

cided to jump in and attempt to solve the problem and others who came as participants it added to the inspiration. We had about a dozen challenges that need solutions.

21 teams formed with 1 focus to create the solution for that individual which would impact their quality of life. What a Powerful Mission?! The synergy in the room as the team emerged and ideas were developing was so intense that it is difficult to describe other than to say it like the "Energizer Bunny times 1,000." Teams range in age to expertise with a team member being 10 years old to a team member with 30 years of professional expertise in engineering. The diversity on the teams and the collaboration was incredible as they worked towards that one goal.

Teams were problem solving, mentors were guiding, veterans were consulting and prototypes were printing. And the expertise in the room was AMAZING...mentors from Toyota, GE, 3D Systems, Stratasys, CAD program experts, the Assistive Technology Program, McGuire VA Medical Center's therapy and prosthetics staff, software engineers and physicians.

The designs were then sent to one of the fourteen 3D Printers for the prototypes to print overnight – you could hear the humming of the machines as they worked hard to create the different teams' visions turning them into possible solutions.

Day 2 brought just as much energy if not more, as the teams' only had a few hours to final-

ize their creations...it was a rush to the very last minute with team members running around trying to find tools, consult with mentor and create the final presentation.

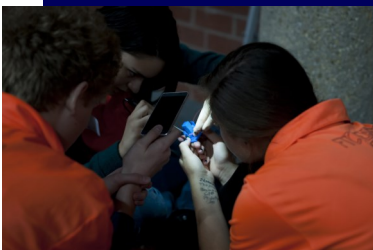
As part of the judging criteria, all of the teams had to upload their designs to the NIH 3D Print Exchange where the designs are open source meaning that anyone, Veteran or non-Veteran, would have access to their designs that could potential impact their everyday which in turns improves their quality of life. How Cool is that! The Make-A-Thon not only changed our Veterans' lives but the public as a whole.

Now it was time for the teams to present their solutions in 3 minutes...talk about time crunch. I was not presenting but I could feel the pressure to say everything they wanted and showcase their design in such a short amount of time. After 21 presentations and almost 2 hours, the judges had the Huge Undertaking of deciding the ultimate winning design.

And the winner is, drum roll please...Team Spline with their coupler design for Veteran Lisa Marie Wiley who lost her leg below the knee from a bomb blast. They won \$20,000 from Google.com. There were six other winners of prize money as well.

Everyone's lives were impacted and changed. There is nothing more I can say but Thank you to everyone involved.

**"Thank you for
this
opportunity"
- A Participant**



Innovation Creation Series Make-A-Thon, cont.

This will allow all the designs to be available to the public for others to use to solve their everyday challenges. Each of the 17 teams had 3 minutes to present their design allowing judges 2 minutes to ask questions. There was a total of \$30,000 in prize money given by Google.org.

And the Winners were:

- Overall Winner (\$20,000)- Spline Coupler
- 1st Prize (\$2,000) - Glucose tester
- 2nd Prize (\$1,000) - Camo Cup

***“What an amazing event!”
- A Mentor***

- Girls Lounge Personalized Prosthetic & Assistive Technology for Women’s Challenge (\$1,000) - Make-up Glove

- Pillbox Challenge (\$1,000) - DrugPushers’ Water bottle

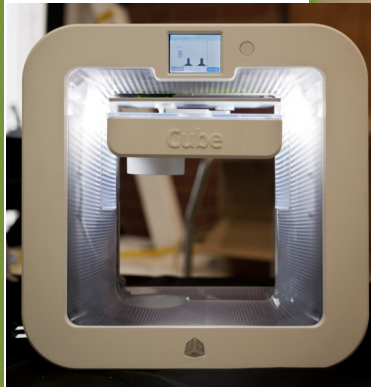
- Grip Strength + Speed Upper Extremity Prosthetic Challenge -(\$1,000) - Dr. McCarran

- Spotlight award for 18 and under—Duck & Cover

We thank the whole McGuire Team in making this event a GREAT success!



***“I can’t believe I helped a Veteran”
- A 3D Printer Vendor***





Rod Goode

“I liked that the purpose was to help people and I felt like I had something to offer.”

- Rod Goode



Rod Goode, VA Employee on the Winning Team

... Ben Salatin, AT Team

This summer at the end of July, McGuire Veterans Hospital hosted the 1st ever VA run Make-a-Thon as part of the VA Innovation Creation Series. Rod Goode, an IT computer assistant at McGuire was the only VA employee to participate in the challenge. He joined 125 other participants from across the US that came from the public.

How did you hear about the Make-a-thon?

I saw an all employee email from the McGuire PR department announcing the event. I asked my boss and he said it was OK to participate but to keep my Blackberry on me in case he needed me for something.

Why did you want to participate?

It seemed cool to me. I liked that the purpose was to help people and I felt like I had something to offer.

Had you heard of a make-a-thon before participating in this one?

No, I hadn't but I have heard of Maker Fairs before and how they give people that make anything a place to show it off. I've never been to one before though.

How or why did you decide to join Team Spline?

So there was this group of us standing around listening to LisaMarie describe and demonstrate her need for a quick-release coupler for her prosthetic legs. We began to chat together and

brainstorming ideas. Then we all decided to just form a team together.

What did you bring to the team?

Well, at the beginning of the design process, I provided some starting ideas from my experience working on cars. There were some car part designs that I thought might be useful. The other team members took my idea and began to modify it.

What did you learn from this experience?

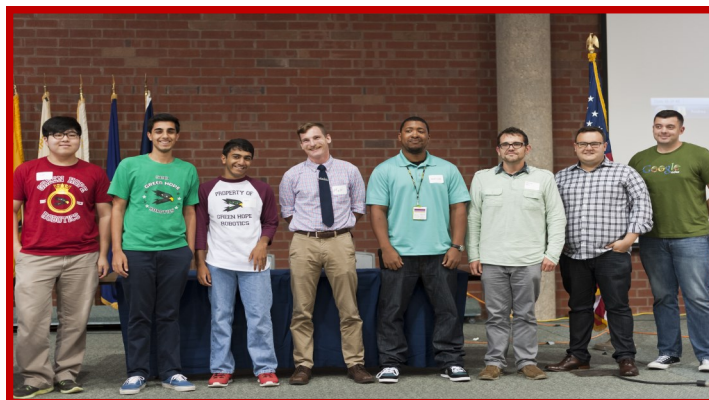
I learned stuff about prosthetics I never knew. It seemed like some prosthetic part designs have been updated a lot over the years and some haven't changed for a long time.

What will happen now with the prosthetic coupler Team Spline developed?

We've all emailed together some but at this point, I don't know of any efforts to keep working on the design. I was kind of expecting there to be more follow up from the VA Center for Innovation that sponsored the event to provide mentorship to something.

Do you think the VA should host future events like this? Why?

Yes. It helps to get lots of perspectives on a problem to come up with new ideas that people close to the problem may not think of. It gives people a chance to learn about and provide input in an area they aren't necessarily experts at.



Winning Team...Team Spline

Thank you from Duck and Cover

Dear McGuire Medical Center Staff,

Team Duck and Cover would like to thank you for the opportunity to participate in the VA Innovation Creation Series. We are grateful to you for opening our eyes to some of the issues that face our veterans. Without, we would not have been presented this option. You facilitated an amazing change to lessen the burden that disabled warriors carry. Hopefully our design entry can ease the troubles that come with having a prosthetic device for everyone. It enables them to clip their prosthetic in place on the socket. Then with just a push down on the release ring the device slides off and can be swapped with the others. Partaking in this occasion inspired us to want to make a difference and contribute to similar events that provide assistance to veterans. We appreciate you for hosting this event that allowed us to benefit these heroes. It made an impact on our lives to see their struggle and to aide them as much as we could.

With Many Thanks,

Team Duck and Cover

NOTE: They are the winners of the Under 18 category





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Assistive Technology Program Mission

- To enhance the ability of Veterans and Active Duty members with disabilities to fulfill life goals through the coordination and provision of appropriate interdisciplinary assistive technology services.
- To serve as an expert resource to support the application of assistive technology within the VA health care system.

Nuts and Bolts of Rehab Engineering...What is a Makerspace?

...Ben Salatin, AT Rehab Engineering

Makerspaces, sometimes also referred to as hackerspaces are creative, Do-It-Yourself (DIY) spaces where people can gather to create, invent, and learn. Think of it like going to a gym except instead of exercise equipment there is all kinds of tools to make things. Tools like 3D printers and 3D scanners, cheap but powerful electronics, laser cutters and engravers, woodworking equipment, metalworking equipment, sewing machines, and lots of hand tools. The internet itself is a tool as it enables increased collaboration, digital workflow, distributed manufacturing and collaborative economies.

The community of people that you will find at a makerspace consists of a wide variety of interests and skill levels, from industry experts to garage tinkerers. For some it's a full-time job, while others are weekend warriors. The types of people who identify as makers is just as varied, from those who focus on home crafts, baking and preserving, to electronics experts to woodworkers and welders.

Makerspaces are part of the maker movement which is described this way by AdWeek.com

The maker movement, as we know, is the umbrella term for independent inventors, designers and tinkerers. A convergence of computer hackers and traditional artisans, the niche is established enough to have its own magazine, Make, as well as hands-on Maker Faires that are catnip for DIYers who used to toil in solitude. Makers tap into an American admiration for self-reliance and combine that with open-source learning, contemporary design and powerful personal technology like 3-D printers. The creations, born in cluttered local workshops and bedroom offices, stir the imaginations of consumers numbed by generic, mass-produced, made-in-China merchandise.

The maker movement has led to the creation of a number of technology products and solutions by typical individuals working without supportive infrastructure. This is facilitated by the increasing amount of information available to individuals and the decreasing cost of elec-

tronic components. This, combined with the open-source movement, initially focused on software, has been expanding into open-source hardware, assisted by easy access to websites to share your designs from.

Last summer I wrote about web resources for DIY assistive technology (AT). As the tools and software for designing and building get cheaper and learning how to use them gets easier (think Youtube) there is more and more ways for people to design and create their own high quality AT. I would encourage you to visit your local makerspace. Some city libraries have started their own makerspaces. If you're a college student, your school may have a makerspace just for students. And when you build some AT, share the design freely online for others to make for themselves or show it off at your local maker festival. Make something and share it openly.

Resources:

- Richmond, Virginia Maker Space (non-profit) <http://www.hackrva.org>
- Tech Shop makerspace (for-profit) <http://www.techshop.ws/>
- RVA Makerfest <http://www.rvamakerfest.com>